

REMARKS

The Applicant has received and reviewed the Office Action dated July 2, 2007 wherein the Office objected to the drawings; required a new title for the application; objected to claim 7 due to informalities; rejected claims 6-21 under 35 U.S.C. 112 as being indefinite; and rejected claims 6-21 on the grounds of nonstatutory obviousness-type double patenting.

The Office also rejected claims 6, 9-10, 12-13, and 17-21 under 35 U.S.C. 103(a) as being unpatentable over the combination of Applicant's Admission of Prior Art on pages 2-7 of the Applicant's specification (herein the AAPA) in view of European publication EP 0601268 (herein the EP'268); rejected claims 6, 9-10, 12-13, and 17-21 under 35 U.S.C. 103(a) as being unpatentable over the combination of the AAPA in view of German publication DE 4127956 (herein the GE'956) and rejected claims 8, 11, and 14-16 under 35 U.S.C. 103(a) as being unpatentable over the AAPA in view of EP'268 and/or the combination of the AAPA in view of the GE'956 as applied to claims 6 and 9 and further in view of Kipp 5316505 as evidenced by Peslerbe et al 2006/0127693. Claims 1-5 and 22-27 were previously withdrawn from further consideration in response to an Office restriction requirement.

Objection to the drawings

The drawings stand objected to as failing to comply with 37 CFR 1.84(p) (5) because "... the description of Figure 1 at paragraph bridging pages 10-11 does not make reference to such a character..."; because the drawings include reference character "20," which is not mentioned in the description; because the drawings include reference characters "60f and

61f,” which is not mentioned in the description of Figure 7a; and because the drawings include reference character “60f,” which is not mentioned in the description of Figure 7b.

In response to the Office’s aforementioned objections to the drawings, the Applicant has amended the specification to include references to the above reference characters.

Applicant has enclosed a copy of the amendments to the specification with the present response. In view of the aforementioned, the Applicant requests that the Office’s objection to the drawings be withdrawn.

Specification

The Office on page 5 of the Office Action dated July 2, 2007 held that the title of the invention is not descriptive and required that the Applicant replace the current title with a new title that is clearly indicative of the invention. In response to the aforementioned, the Applicant has amended the title for the present application from “BATTERY PART” to “DIE CAST BATTERY TERMINAL AND A METHOD OF MAKING.”

Claim Objection

Applicant’s claim 7 stand objected because the term “batter” in line 1 is misspelled. In response to the Office’s aforementioned objection, the Applicant has amended claim 1 by replacing the term “batter” with the term “battery.”

Rejection under 35 U.S.C. 112

Applicant's claims 6, 7, 8, 9, and 19 stand rejected under U.S.C. 112 as being indefinite. More specifically, the office held that there is insufficient antecedent basis for the limitation "The method" in line 1 of claim 6; that there is insufficient antecedent basis for the limitation "a battery part" in line 2 of claim 6; that there is insufficient antecedent basis for the limitation "the set of annular acid rings" in line 4 of claim 7; that there is insufficient antecedent basis for the limitation "the battery terminal" in line 1 of claim 8; that there is insufficient antecedent basis for the limitation for "The method" in line 1 of claim 9; that the term "an included angle" in claims 9 and 12 is uncertain meaning, thereby rendering the claim indefinite; and that there is insufficient antecedent basis for the limitation "The method" in line 1 of claim 19.

In response to the Office's aforementioned rejections of Applicant's claims 6, 7, 8, 9, and 19 under U.S.C. 112, the Applicant has amended claims 6, 7, 8, 9, and 19 to correct the problems associated with antecedent basis and the problem associated with uncertainty in meaning. In view of the aforementioned, the Applicant requests that the Office's rejections to Applicant's claims 6, 7, 8, 9, and 19 under U.S.C. 11 be withdrawn.

Rejection under Non-statutory Double Patenting

Applicant's claims 6-21 stand provisionally rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 6-21 of co-pending Application No. 11/011362.

The Applicant respectfully disagrees with the Office aforementioned provisional non-statutory obviousness-type double patenting rejection of Applicant's claims 6-21 based on co-pending Application No. 11/011362 as co-pending Application No. 11/011362 was filed on December 13, 2004 which is after the present application's filing date of March 18, 2004 thereby making any issue regarding unjustified or improper timewise extension moot.

**Rejection under 35 U.S.C. 103(a) to the
combination of the AAPA and the EP'268**

Applicant's claims 6, 9-10, 12-13, and 17-21 stand rejected under U.S.C. 103(a) as being unpatentable over the combination of Applicant's Admission of Prior Art on pages 2-7 of the Applicant's specification (herein the AAPA) in view of European publication EP 0601268 (herein the EP'268).

A. The combination of the AAPA and the EP'268 does not teach the casting of a battery part having acid ring having at least one flareable lip.

In regards to the Office's aforementioned rejection, Applicant's claim 6 calls for a method of making a battery part comprising the step of:

"... casting the battery part with an acid ring with the acid ring having at least one flareable lip having a lateral surface and a beveled surface forming an acute angle with the lateral surface." (Emphasis added.)

The Applicant respectfully submits that the combination of the AAPA and the EP'268 does not teach the above step of Applicant's claim 6 as the AAPA does not teach the casting of a battery part having an "... acid ring having at least one flareable lip having a lateral

surface and a beveled surface...” or the step of casting of a battery part having an “... acid ring having at least one flareable lip having a lateral surface and a beveled surface...” with the beveled surface “... forming an acute angle with the lateral surface.” (Emphasis added.) It is noted that the AAPA does not teach the aforementioned steps of Applicant’s claim 6 as the AAPA does not teach a battery terminal having acid rings with at least one flareable lip. The AAPA instead specifically teaches for teaches battery terminals having rectangular shaped acid rings.

In regards to the EP’268, it is noted that the Applicant’s review of the translation of the EP’268 failed to reveal a teaching of the step of casting a battery part having an “... acid ring having at least one flareable lip having a lateral surface and a beveled surface...” as claimed in Applicant’s method claim 6. The Applicant’s review of the translation of the EP’268 also failed to reveal the teaching of the step of casting a battery part having an “... acid ring having at least one flareable lip having a lateral surface and a beveled surface...” with the beveled surface “... forming an acute angle with the lateral surface” as claimed in Applicant’s method claim 6.

Instead, the Applicant respectfully submits that the EP’268, in Figures 2 and 4, teaches away from the casting of a battery part of Applicant’s claim 6 by specifically teaching EP’268’s terminals 10 and 30 as having barb-like undercuts 15 and 34. It is noted that the presence of barb-like undercuts 15 and 34 will prevent or hinder the terminals’ removal from the mold after their casting.

It is submitted that the EP'268 also does not teach EP'268's terminals 10 and 30 as including acid rings each having a flareable lips. In regards to EP'268's protrusions 13 and 32, the Applicant respectfully submits that EP'268 teaches away from the flaring of EP'268's protrusions 13 and 32 as the flaring of EP'268 protrusions 13 and 32 would result in a change the effectiveness of EP'268's barb-like undercuts 15 and 34, namely to provide for "... a wedging effect and an increase in sealing surface..."

It is for the above reasons that the Applicant respectfully submits that the combination of the AAPA and the EP'268 does not teach the step of casting of a battery part having acid ring having at least one flareable lip as called for in Applicant's method claim 6.

B. The combination of the AAPA and the EP'268 does not teach an acid ring having surfaces that form acute angle, or angle less than 90°, or V-shaped groove

In further regards to Applicant's claims 6, 9-10, 12-13, and 17-21, Applicant's claim 6 calls for a method of making a battery part comprising the step of:

"... casting the battery part with an acid ring with the acid ring having at least one flareable lip having a lateral surface and a beveled surface forming an acute angle with the lateral surface." (Emphasis added.)

Applicant's claims 9-21, as amended, each call for a method of making a battery terminal comprising the step of:

"... forming a plurality of acid rings each having a lip formed by a first lateral surface and a second surface with the first lateral surface and the second surface having an angle less than 90 degrees." (Emphasis added.)

The Applicant respectfully submits that the combination of the AAPA and the EP'268 does not teach the step of casting a battery part having an acid ring with the acid ring including "... at least one flareable lip having a lateral surface and a beveled surface forming an acute angle with the lateral surface..." as called for in Applicant's claim 6. The Applicant respectfully submits that the combination of the AAPA and the EP'268 also does not teach the step of forming "... acid rings each having a lip formed by a first lateral surface and a second surface with the first lateral surface and the second surface having an angle less than 90 degrees ..." as called for in Applicant's claims 9-21.

More specifically, in regards to the AAPA, it is submitted that the AAPA does not teach the step of forming "... at least one flareable lip having a lateral surface and a beveled surface forming an acute angle with the lateral surface..." as called for in Applicant's claim 6 or the step of forming "... a lip formed by a first lateral surface and a second surface with the first lateral surface and the second surface having an angle less than 90 degrees ..." as called for in Applicant's claims 9-21. Support for the aforementioned can be found on page 12, lines 7-8 wherein the Office stated:

"... the AAPA does not expressly disclose the specific shape (acute angle, or angle less than 90°, or V-shaped groove) of the acid rings on the battery terminal."
(Emphasis added.)

In regards to the EP'268, on page 12, lines 10-14 of the Office Action, in support of the Office's rejection of Applicant's claims 6, 9-10, 12-13, and 17-21, the Office held:

"The EP'268 discloses terminal for batteries wherein the terminal includes continuous grooves (the acid rings) which can be inserted into a battery case (ABSTRACT/COL, Lines 30-55). Specifically, Figure 5 depicts grooves on the

battery terminal having an acute angle, or angle less than 90°, or V-shaped groove (See reference numerals 42-43 below). The groove has at least two lips (see reference numerals 42).” (Emphasis added.)

The Applicant respectfully disagrees with the Office’s above statement in support of the Office’s rejection of Applicant’s claims 6, 9-10, 12-13, and 17-21 as EP’268’s Figure 5 does not show the formation of acid rings each having “... at least one flareable lip having a lateral surface and a beveled surface forming an acute angle with the lateral surface...” as called for in Applicant’s claim 6 or the formation of acid rings each having “... a lip formed by a first lateral surface and a second surface with the first lateral surface and the second surface having an angle less than 90 degrees ...” as called for in Applicant’s claims 9-21.”

It is submitted that EP’268’s Figure 5 also does not show an acid ring having two surfaces that form an acute angle, or angle less than 90°, or V-shaped groove. EP’268’s Figure 5 instead shows a first protrusion/acid ring 12 and a second protrusion/acid ring 12 (which the Office identifies as reference numerals 42) separated by groove 13 (which the Office identifies as reference numerals 43). Support for the aforementioned can be found in EP’268’s Figure 9, which shows the first protrusion 12 and second protrusion 12 has having similar features to the triangular shaped protrusions 32. Each of the protrusion/acid rings 12 is shown in Figure 9 as having a first side and a second side with the first side forming a right or 90° angle with the second side and not an acute angle.

In view of the above, since the AAPA and the EP’268 each do not teach the above steps of Applicant’s claims 6, 9-10, 12-13, and 17-21, it is respectfully submitted that their

combination also does not teach the above steps of Applicant's claims 6, 9-10, 12-13, and 17-21.

In further regards to Applicant's dependent claims 12 and 17, Applicant's claim 12 calls for the method of making a battery terminal of claim 9:

“... including forming a second lip on the acid ring with the second lip having a first lateral surface and a second surface with the first lateral surface and the second surface of the second lip having an angle less than 90 degrees.” (Emphasis added.)

Applicant's dependent claim 17 calls for the method of claim 12:

“... wherein the second surface of the first lip and the second surface of the second lip are formed into a V-shaped groove.” (Emphasis added.)

The Applicant respectfully submits that the combination of the AAPA and the EP'268 does not teach the above steps of Applicant's dependent claims 12 and 17. More specifically, in regards to the AAPA, the Applicant submits that the AAPA does not teach the above features of Applicant's dependent claims 12 and 17 per the Office's statement on page 12, lines 7-8 of the Office Action. In regards to the EP'268, it is noted that a review of the EP'268 reveals that each of EP'268 protrusion/acid rings 12 do not include a second lip having a first lateral surface and a second surface that form an angle less than 90 degrees thereon as called for in Applicant's claim 12 or a V-shaped groove formed by a second surface of a first lip and a second surface of a second lip of the protrusion/acid ring 12 as called for in Applicant's claim 17.

In view of the above, since the AAPA and the EP'268 each do not teach the above steps of Applicant's dependent claims 12 and 17, it is respectfully submitted that their combination also does not teach the above steps of Applicant's dependent claims 12 and 17.

In regards to Applicant's dependent claim 19, Applicant's claim 19 calls for the method of claim 9:

“... including the step of flowing molten metal into a cavity formed by radially movable side mold members and axially displaceable end mold members.

On page 11, lines 11-16, in support of the Office's rejection of Applicant's claim 19 to the combination the AAPA and the EP'268, the Office stated:

“... The AAPA makes reference to document US patent 6644084 which further makes known that a lead alloy is used to make the battery terminal; and the use of molten metal (i.e. lead) poured into a mold or casting (the cavity) and formed into a battery terminal (*Applicant's specification pages 2-7 and US'084 at COL, lines 15-35*).”

The Applicant respectfully submits that it would not have been obvious to combine the AAPA and with the EP'268 in support of the Office's rejection of Applicant's claim 19 as the EP'268 teaches away from the step of molding or casting, including the step of flowing molten metal into a cavity/mold as called for in Applicant's claim 19. Note that the EP'268 teaches the lower part of EP'268's terminal 10 as including a barb-like undercut 15, which will hinder the molding or casting process as the presence of the barb-like undercut 15 will prevent or hinder the removal of the product from the mold.

In further regards to Applicant's dependent claims 20 and 21, Applicant's claim 20 calls for the method of making a battery terminal of claim 9:

“...including the step of applying a radially compressive force sufficiently to flare the lip and form a sealing bead thereon but insufficient to bend the lip into a hook.” (Emphasis added.)

Applicant's dependent claim 20 calls for the method of claim 10:

“...wherein the battery terminal is placed in a collet having a radius of curvature substantially the same as the radius of curvature of the acid ring and the collet is collapsed to radially compress the lip to form a sealing bead on the lateral surface of the lip.” (Emphasis added.)

The Applicant respectfully submits that it would not have been obvious to combine the APPA per reference 6,644,084 and with the EP'268 in support of the Office's rejection of Applicant's claims 20 and 21. In regards to the EP'268, it is submitted that a review of the EP'268 reveals that the EP'268 fails to teach the above steps of Applicant's claims 20 and 21. Note that the EP'268 does not teach EP'268's terminal 10 as including sealing rings having lips thereon. It is further noted that the EP'268 instead teaches away from Applicant's 21 by disclosing the lower part of EP'268's terminal 10 as including a barb-like undercut 15 or hook.

Since the sealing rings of EP'268's terminal 10 lacks lip(s), it is respectfully submitted that the EP'268 thus fails to teach “... the step of applying a radially compressive force sufficiently to flare the lip ...” as called for in Applicant's dependent claim 20 or the step of collapsing a collet “...to radially compress the lip to form a sealing bead on the lateral surface of the lip ...” as called for in Applicant's dependent claim 21.” (Emphasis added.)

In regards to the APPA, the Applicant respectfully submit that the APPA per reference 6,644,084, also does not teach "... the step of applying a radially compressive force sufficiently to flare the lip ..." as called for in Applicant's dependent claim 20 or the step of collapsing a collet "...to radially compress the lip to form a sealing bead on the lateral surface of the lip ..." as called for in Applicant's dependent claim 21."

It is submitted that the sealing rings 50 of the battery terminals of the reference 6,644,084 do not have lips as called for in Applicant's dependent claims 20 and 21. Note that the sealing rings 50 of the battery terminals of the reference 6,644,084 are instead shown in Figures 5A, 6A, and 7A as comprising rectangular shaped acid rings. Since the sealing rings 50 of the battery terminals of the reference 6,644,084 lacks lip(s), it is respectfully submitted that the APPA per reference 6,644,084 thus fails to teach "... the step of applying a radially compressive force sufficiently to flare the lip ..." as called for in Applicant's dependent claim 20 or the step of collapsing a collet "...to radially compress the lip to form a sealing bead on the lateral surface of the lip ..." as called for in Applicant's dependent claim 21." (Emphasis added.)

In view of the above, since the AAPA and the EP'268 each do not teach the above steps of Applicant's dependent claims 20 and 21, it is respectfully submitted that their combination also does not teach the above steps of Applicant's dependent claims 20 and 21.

C. The Office's suggestion to change the shape of the AAPA and the EP'268 amounts to more than just a change in the fundamental way the that the

AAPA and the EP'268 would be put together or would operate.

On page 13, lines 12-18 of the Office Action, in further support of the Office's above rejection of Applicant's claims 6, 9-10, 12-13, and 17-21 the Office stated:

"..., it is noted changes in the shape is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed acid rings (groove) is significant. In re Dailey, 149 USPQ 47. It is also noted that aesthetic design changes having no mechanical function cannot be relied upon to patentably distinguish the claimed invention from the prior art. In re Seid, 73 USPO 431."

In response to the Office's above statement regarding the significance of "... an acid ring having at least one lip comprising two surfaces that form an acute angle, or angle less than 90°, or V-shaped groove ..." as called for in Applicant's claims 6, 9-10, 12-13, and 17-21, the Applicant respectfully directs the Office's attention to page 5, lines 22-25 and page 6, lines 1-4 of the Applicant's specification wherein the Applicant disclosed:

"In contrast to the prior art acid rings, where the shape of the acid ring is substantially altered, in the present invention one can cast a battery part with the acid ring having a bifurcated end separated by a circumferential groove or an end with a single annular tapered lip. The bifurcated end results in two outwardly extending annular lips on each acid ring. The annular lips on each acid ring can be flared away from each other to produce a beveled surface or sealing bead along an annular outer portion of each of the annular lips which not only laterally restrains the container with respect to the terminal but also forms an enhanced sealing region between the container and the acid ring. In addition the circuitous path provided by the bifurcated acid rings can increase the resistance to electrolyte leakage by providing a more tortuous interface between the acid rings and the container." (Emphasis added.)

In further regards to the Office's above statement, in the case of *In re Piasecki*, the Federal Circuit held that the Office has the initial burden of establishing a prima facie case of obviousness. See *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir.

1984); *In re Rinehart*, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976). In the Office's rejection of the Applicant's above claims, it is respectfully submitted that the Office does not explain how the applied prior art itself would have fairly suggested Applicant's claimed invention to one of ordinary skill in the art. See *In re Rinehart*, 531 F.2d at 1051, 189 USPQ at 147. Instead, the Office cites the above *per se* rule that a change in shape is within the skill of the art. It is respectfully noted that the Federal Circuit in *In re Ochiai* held that "... reliance on *per se* rules of obviousness is legally incorrect and must cease." See *In re Ochiai*, 71 F.3d 1565, 1572, 37 USPQ2d 1127, 1133 (Fed. Cir. 1995).

More over, in regards to the AAPA, the Office has acknowledge that the AAPA does not teach an acid ring having two surfaces that form an acute angle, or angle less than 90°, or V-shaped groove. In regards to the EP'268, the EP'268 teaches the protrusion/acid rings 12 having curved tips, and more specifically, a first side and a second side with the first side forming a right or 90° angle with the second side and not an acute angle.

The Office's suggestion to change the shape of EP'268's protrusion/acid rings 12 amounts to more than just a change in the fundamental way the battery part terminal of EP'268 would be put together or would operate. In this regard, the Applicant submits that the Office has not established how an acid ring having at least one lip comprising two surfaces that form an acute angle, or angle less than 90°, or V-shaped groove would have been recognized as a workable alternative, much less have been suggested as an alternative. Therefore, the *per se* rule relied upon by the Office does not furnish a relevant teaching

related to the battery part terminal of EP'268 that would have led one of ordinary skill in the art to jettison the construction techniques disclosed therein in favor of employing an acid ring having at least one lip comprising two surfaces that form an acute angle, or angle less than 90°, or V-shaped groove as required by the Applicant's claims subject to the present obviousness rejection.

It is for the above reasons that the Applicant respectfully submits that Applicant's claims 6, 9-10, 12-13, and 17-21 are allowable over the combination of the AAPA and the EP'268.

**Rejection under 35 U.S.C. 103(a) to the
combination of the AAPA in view the GE'956**

Applicant's claims 6, 9-10, 12-13, and 17-21 stand rejected under U.S.C. 103(a) as being unpatentable over the combination of the AAPA in view of German publication DE 4127956 (herein the GE'956).

**A. The combination of the AAPA and the GE'956 does not teach
an acid ring having surfaces that form acute angle, or angle less
than 90°, or V-shaped groove**

In regards to the Office's aforementioned rejection, Applicant's claim 6 calls for a method of making a battery part comprising the step of:

“... casting the battery part with an acid ring with the acid ring having at least one flareable lip having a lateral surface and a beveled surface forming an acute angle with the lateral surface.” (Emphasis added.)

Applicant's claims 9-21, as amended, each call for a method of making a battery terminal comprising the step of:

“... forming a plurality of acid rings each having a lip formed by a first lateral surface and a second surface with the first lateral surface and the second surface having an angle less than 90 degrees.” (Emphasis added.)

The Applicant respectfully submits that the combination of the AAPA and the GE'956 does not teach the step of casting a battery part having an acid ring with the acid ring including “... at least one flareable lip having a lateral surface and a beveled surface forming an acute angle with the lateral surface...” as called for in Applicant's claim 6.

The Applicant respectfully submits that the combination of the AAPA and the GE'956 also does not teach the step of forming “... acid rings each having a lip formed by a first lateral surface and a second surface with the first lateral surface and the second surface having an angle less than 90 degrees ...” as called for in Applicant's claims 9-21.

More specifically, in regards to the AAPA, it is submitted that the AAPA does not teach the formation of “... at least one flareable lip having a lateral surface and a beveled surface forming an acute angle with the lateral surface...” as called for in Applicant's claim 6 or the formation of “... a lip formed by a first lateral surface and a second surface with the first lateral surface and the second surface having an angle less than 90 degrees ...” as called for in Applicant's claims 9-21. Support for the aforementioned can be found on page 15, lines 21-22 wherein the Office stated:

“... the AAPA does not expressly disclose the specific shape (acute angle, or angle less than 90°, or V-shaped groove) of the acid rings on the battery terminal.” (Emphasis added.)

In regards to the GE'956, on page 16, lines 1-7 of the Office Action, in support of the Office's rejection of Applicant's claims 6, 9-10, 12-13, and 17-21, the Office held:

"The GE'956 discloses connecting terminals for a battery having a connecting part 1 and a socket 7 with circumferential grooves 2 (ABSTRACT) to form a seal; wherein the lower edge of the socket part 7 includes a wedge profile to increase the sealing effect (ABSTRACT). Specifically, **Figure 2** depicts grooves on the battery terminal having an acute angle, or angle less than 90°, or V-shaped grooves on (See reference numerals 4 and 6 below). The groove has at least two lips (see reference numerals 4)." (Emphasis added.)

The Applicant respectfully disagrees with the Office's above statement in support of the Office's rejection of Applicant's claims 6, 9-10, 12-13, and 17-21 as GE'956's Figure 2 does not show the formation of acid rings each having "... at least one flareable lip having a lateral surface and a beveled surface forming an acute angle with the lateral surface..." as called for in Applicant's claim 6 or the formation of acid rings each having "... a lip formed by a first lateral surface and a second surface with the first lateral surface and the second surface having an angle less than 90 degrees ..." as called for in Applicant's claims 9-21."

It is submitted that GE'956's Figure 2 does not show an acid ring having two surfaces that form an acute angle, or angle less than 90°, or V-shaped groove. GE'956's Figure 2 instead shows the lower part of the socket part 7 as comprising a pair of protrusions 4 separated by a v-shaped valley 6. The Applicant respectfully submits that the aforementioned lower part of GE'956's socket part 7 is not an acid ring. Referring to GE'956's Figure 1, it is respectfully submitted GE'956's circumferential groove 2 instead functions as the acid rings. Further note that each of the protrusions 4 is shown in Figure 2

as having a first side and a second side with the first side of the protrusions 4 forming a right or 90° angle and not an acute angle with the second side of the protrusions 4.

In view of the above, since the AAPA and the GE'956 each do not teach the above steps of Applicant's claims 6, 9-10, 12-13, and 17-21, it is respectfully submitted that their combination also does not teach the above steps of Applicant's claims 6, 9-10, 12-13, and 17-21.

In further regards to Applicant's dependent claims 12 and 17, Applicant's claim 12 calls for the method of making a battery terminal of claim 9:

“... including forming a second lip on the acid ring with the second lip having a first lateral surface and a second surface with the first lateral surface and the second surface of the second lip having an angle less than 90 degrees.” (Emphasis added.)

Applicant's dependent claim 17 calls for the method of claim 12:

“... wherein the second surface of the first lip and the second surface of the second lip are formed into a V-shaped groove.” (Emphasis added.)

The Applicant respectfully submits that the combination of the AAPA and the GE'956 does not teach the above steps of Applicant's dependent claims 12 and 17. More specifically, in regards to the AAPA, the Applicant submits that the AAPA does not teach the above features of Applicant's dependent claims 12 and 17 per the Office's statement on page 15, lines 21-22 of the Office Action. In regards to the GE'956, it is noted that each of GE'956 circumferential grooves 2 do not include a second lip having a first lateral surface and a second surface that form an angle less than 90 degrees thereon as called for in

Applicant's claim 12 or a V-shaped groove formed by a second surface of a first lip and a second surface of a second lip of the protrusion/acid ring 12 as called for in Applicant's claim 17. Since GE'956 circumferential grooves 2 do not include the presence of a second lip, it is submitted that the GE'956 thus does not teach the steps of Applicant's dependent claims 12 and 17.

In view of the above, since the AAPA and the GE'956 each do not teach the above steps of Applicant's dependent claims 12 and 17, it is respectfully submitted that their combination also does not teach the above steps of Applicant's dependent claims 12 and 17.

In further regards to Applicant's dependent claims 20 and 21, Applicant's claim 20 calls for the method of making a battery terminal of claim 9:

“...including the step of applying a radially compressive force sufficiently to flare the lip and form a sealing bead thereon but insufficient to bend the lip into a hook.” (Emphasis added.)

Applicant's dependent claim 20 calls for the method of claim 10:

“...wherein the battery terminal is placed in a collet having a radius of curvature substantially the same as the radius of curvature of the acid ring and the collet is collapsed to radially compress the lip to form a sealing bead on the lateral surface of the lip.” (Emphasis added.)

The Applicant respectfully submits that it would not have been obvious to combine the AAPA per reference 6,644,084 and with the GE'956 in support of the Office's rejection of Applicant's claims 20 and 21. In regards to the GE'956, it is submitted that a review of the GE'956 reveals that the GE'956 fails to teach the above steps of Applicant's claims 20 and

21. Note that the GE'956 does not teach GE'956's socket part 7 as including sealing rings having lips thereon. Since the sealing rings 4 of GE'956's socket part 7 lacks lip(s), it is respectfully submitted that the GE'956 thus fails to teach "... the step of applying a radially compressive force sufficiently to flare the lip ..." as called for in Applicant's dependent claim 20 or the step of collapsing a collet "...to radially compress the lip to form a sealing bead on the lateral surface of the lip ..." as called for in Applicant's dependent claim 21." (Emphasis added.)

In regards to the APPA, the Applicant respectfully submit that the APPA per reference 6,644,084, also does not teach "... the step of applying a radially compressive force sufficiently to flare the lip ..." as called for in Applicant's dependent claim 20 or the step of collapsing a collet "...to radially compress the lip to form a sealing bead on the lateral surface of the lip ..." as called for in Applicant's dependent claim 21." It is submitted that the sealing rings 50 of the battery terminals of the reference 6,644,084 also do not have lips as called for in Applicant's dependent claims 20 and 21. Note that the sealing rings 50 of the battery terminals of the reference 6,644,084 are instead shown in Figures 5A, 6A, and 7A as comprising rectangular shaped acid rings. Since the sealing rings 50 of the battery terminals of the reference 6,644,084 lacks lip(s), it is respectfully submitted that the APPA per reference 6,644,084 thus fails to teach "... the step of applying a radially compressive force sufficiently to flare the lip ..." as called for in Applicant's dependent claim 20 or the step of collapsing a collet "...to radially compress the lip to form a sealing bead on the lateral surface of the lip ..." as called for in Applicant's dependent claim 21." (Emphasis added.)

In view of the above, since the AAPA and the GE'956 each do not teach the above steps of Applicant's dependent claims 20 and 21, it is respectfully submitted that their combination also does not teach the above steps of Applicant's dependent claims 20 and 21.

B. The Office's suggestion to change the shape of the AAPA and the GE'956 amounts to more than just a change in the fundamental way the that the AAPA and the GE'956 would be put together or would operate.

On page 17, lines 3-7 of the Office Action, in further support of the Office's above rejection of Applicant's claims 6, 9-10, 12-13, and 17-21 the Office stated:

"... it is noted changes in the shape is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed acid rings (groove) is significant. In re Dailey, 149 USPO 47. It is also noted that aesthetic design changes having no mechanical function cannot be relied upon to patentably distinguish the claimed invention from the prior art. In re Seid, 73 USPO 431."

In response to the Office's above statement regarding the significance of "... an acid ring having at least one lip comprising two surfaces that form an acute angle, or angle less than 90°, or V-shaped groove ..." as called for in Applicant's claims 6, 9-10, 12-13, and 17-21, the Applicant respectfully directs the Office's attention to page 5, lines 22-25 and page 6, lines 1-4 of the Applicant's specification wherein the Applicant disclosed the advantages and/or significance of the Applicant's acid ring as called for in Applicant's claims 6, 9-10, 12-13, and 17-21.

In further regards to the Office's above statement, in the case of *In re Piasecki*, the Federal Circuit held that the Office has the initial burden of establishing a prima facie case of

obviousness. See *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); *In re Rinehart*, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976). In the Office's rejection of the Applicant's above claims, it is respectfully submitted that the Office does not explain how the applied prior art itself would have fairly suggested Applicant's claimed invention to one of ordinary skill in the art. See *In re Rinehart*, 531 F.2d at 1051, 189 USPQ at 147. Instead, the Office cites the above *per se* rule that a change in shape is within the skill of the art. It is respectfully noted that the Federal Circuit in *In re Ochiai* held that "... reliance on *per se* rules of obviousness is legally incorrect and must cease." See *In re Ochiai*, 71 F.3d 1565, 1572, 37 USPQ2d 1127, 1133 (Fed. Cir. 1995).

In regards to the AAPA, the Office has acknowledged that the AAPA does not teach an acid ring having two surfaces that form an acute angle, or angle less than 90°, or V-shaped groove. In regards to the GE'956, the GE'956 teaches circumferential grooves/acid rings 2, which referring to Figure 1, have semi-circular to curved tips. The Office's suggestion to change the shape of GE'956's circumferential grooves/acid rings 2 amounts to more than just a change in the fundamental way the battery part terminal of GE'956 would be put together or would operate. In this regard, the Applicant respectfully submits that the Office has not established how an acid ring having at least one lip comprising two surfaces that form an acute angle, or angle less than 90°, or V-shaped groove would have been recognized as a workable alternative, much less have been suggested as an alternative.

Therefore, it is respectfully submitted that the *per se* rule relied upon by the Office does not furnish a relevant teaching related to the battery part terminal of GE'956 that would have led one of ordinary skill in the art to jettison the construction techniques disclosed therein in favor of employing circumferential grooves/acid rings 2 each having at least one lip comprising two surfaces that form an acute angle, or angle less than 90°, or V-shaped groove as required by the Applicant's claims subject to the present obviousness rejection.

It is for the above reasons that the Applicant respectfully submits that Applicant's claims 6, 9-10, 12-13, and 17-21 are allowable over the combination of the AAPA and the GE'956.

**Rejection under 35 U.S.C. 103(a) to the various combination
of the AAPA, EP'268, GE'956, Kipp, and Peslerbe et al.**

Applicant's claims 8, 11, and 14-16 stand rejected under U.S.C. 103(a) as being unpatentable over the AAPA in view of EP'268 and/or the combination of the AAPA in view of the GE'956 as applied to claims 6 and 9 and further in view of Kipp (U.S. Patent No. 5,316,505) as evidenced by Peslerbe et al. (U.S. Patent Application Serial No. 2006/0127693).

Applicant's Claim 8

In regards to the Office's rejection of Applicant's dependent claim 8, Applicant's dependent 8 calls for the method of claim 6:

“... wherein the battery terminal is placed in a fluidized bed with particles having a hardness greater than the hardness of the battery terminal.”

The Applicant respectfully submits that the combination of the AAPA and the EP'268 and/or the combination of the AAPA and the GE'956 in further view of Kipp as evidenced by Peslerbe et al. does not teach the above step of Applicant's dependent claim 8. Note that the AAPA, the EP'268 the GE'956 does not teach the above step of Applicant's dependent claim 8 per the Office's statement on page 17, lines 16-18 of the Office Action. In regards to the references of Kipp and Peslerbe et al, it is respectfully submitted that the Applicant's review of the references of Kipp and Peslerbe et al failed to reveal the teaching of the placement of a battery terminal in a fluidized bed with particles as called for in Applicant's dependent claim 8.

Since the cited references each do not teach the step of Applicant's dependent claim 8, it is submitted that their combination also does not teach the step of Applicant's dependent claim 8.

Applicant's Claims 11, 14, 15, and 16

In further regards to the Office's above rejection, Applicant's dependent 11 calls for the method of claim 9 including the step of:

“... impacting the second surface to flare the lip on the acid ring to form a sealing region on the lateral surface of the lip.” (Emphasis added.)

Applicant's dependent 14 calls for the method of claim 9 including the step of:

“... impacting the second surfaces by radially striking the second surface to flare the lip to form a sealing bead on the lateral surface of the lip.” (Emphasis added.)

The Applicant respectfully submits that the combination of the APPA and the references of Kipp and Peslerbe et al. with the EP'268 or with the GE'956 does not teach the above steps of Applicant's dependents claims 11 and 14 as the Applicant's review of the APPA and the references of Kipp and Peslerbe et al., EP'268 and the GE'956 failed to reveal the teaching of an acid ring having a lip located on the surface of the acid ring as called for in Applicant's dependent claims 11 and 14.

Applicant's dependent 15 calls for the method of claim 9:

“... wherein the battery terminal is placed in a hopper containing free particles for randomly impinging on the second surface to thereby flare the lip.” (Emphasis added.)

The Applicant respectfully submits that the combination of the APPA and the references of Kipp and Peslerbe et al. with the EP'268 or with the GE'956 does not teach the above step of Applicant's dependent claim 15 as the Applicant's review of the APPA and the references of Kipp and Peslerbe et al., EP'268 and the GE'956 failed to reveal the teaching of an acid ring having a lip located on the surface of the acid ring as called for in Applicant's dependent claim 15. The Applicant's review of the APPA and the references of Kipp and Peslerbe et al., EP'268 and the GE'956 also failed to reveal the teaching of the use of a hopper containing free particles as called for in Applicant's dependent claim 15.

Applicant's dependent 16 calls for the method of claim 9:

“... wherein the second surface is impacted with a radial traveling peening member to thereby flare the lip to form a sealing bead on the lateral suffice for engaging a battery container.” (Emphasis added.)

The Applicant respectfully submits that the combination of the APPA and the references of Kipp and Peslerbe et al. with the EP'268 or with the GE'956 does not teach the above step of Applicant's dependent claim 16 as the Applicant's review of the APPA and the references of Kipp and Peslerbe et al., EP'268 and the GE'956 failed to reveal the teaching of an acid ring having a lip located on the surface of the acid ring as called for in Applicant's dependent claim 16. The Applicant's review of the APPA and the references of Kipp and Peslerbe et al., EP'268 and the GE'956 also failed to reveal the teaching of a radial traveling peening member as called for in Applicant's dependent claim 16.

In further regards to the above steps of claims 11, 14, 15, and 16, on page 10, lines 23-27 and page 11, lines 1-6 of the Applicant's disclosure, the Applicant teaches the advantages of the above steps by disclosing that:

“it has been found that the impingement of particles on the beveled end surfaces of the acid ring can causes the lips of annular acid rings to fold over or flare out and create a beveled sealing region or sealing bead much like an O-ring on the lateral face of the acid rings. Thus, a feature of the present invention is that one eliminates the need to form a "hook like" connection between the battery terminal and the battery container or to deform the entire acid ring into a dovetail.” (Emphasis added.)

The Applicant respectfully submits that it would not have been obvious to combine the APPA and references of Kipp and Peslerbe et al. with the EP'268 or with the GE'956 in support of the Office's rejection of Applicant's claims 11, and 14-16 as the EP'268 and the GE'956 each teaches away from the Applicant's above disclosure. Note that EP'268 in Figure 5 shows the lower part of EP'268's terminal 10 as comprising a dovetail, namely

first protrusion 12 and second protrusion 12 separated by groove 13. Further note that the lower part of EP'268's terminal 10 also includes a barb-like undercut 15. In regards to GE'956, note that GE'956 in Figure 2 also shows the lower part of the socket part 7 as comprising a dovetail, namely the pair of protrusions 4 separated by a v-shaped valley 6.

It is for the above reasons that the Applicant respectfully submits that Applicant's dependent claims 8, 11, and 14-16 are allowable over the combination of the AAPA and the EP'268 and/or the combination of the AAPA and the GE'956 in further view of Kipp as evidenced by Peslerbe et al.

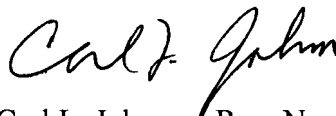
In regards to Applicant's dependent claim 7, it is noted that the Office rejected Applicant's dependent claim 7 under 35 USC 112 as having improper antecedent basis but did not rejection dependent claim 7 to the merits under either 35 USC 102 or 103. In view of the aforementioned, the Applicant is taking the position that Applicant's dependent claim 7 contains allowable subject matter.

In further regards to Applicant's claims 7-8 and 10-21, Applicant's claims 7-8 each depend on Applicant's independent method claim 6 and Applicant's claims 10-21 each depend on Applicant's independent 9. Since Applicant's independent claims 6 and 9 are allowable for the reasons given above, Applicant's dependent claims 7-8 and 10-21 should also allowable.

In view of the above, it is respectfully submitted that the application is in condition for allowance. Allowance of claims 6-21 is respectfully requested. Applicant has enclosed a version of the amendment showing changes made with this response. Please charge any additional fees that may be due to Deposit Account 10-0210.

Respectfully submitted,

JACOBSON AND JOHNSON

By 
Carl L. Johnson, Reg. No. 24,273
Attorneys for Applicant
Suite 285
One West Water Street
St. Paul, Minnesota 55107-2080
Telephone: 651- 222-3775
Fax: 651-222-3776

CLJ/tp
Enclosure